

**REMARKS**

Favorable reconsideration of the application is respectfully requested in light of the amendments and remarks herein.

Upon entry of this amendment, claims 1, 2, 4-8, 10-15, 17-20, and 22-38 will be pending. By this amendment, claims 1, 19, 29, and 33 have been amended. No new matter has been added.

**§103 Rejection of Claims 1-2, 4-6, 10-11, 16, 19-20, 22, 24, 29-31 and 33**

In Section 2 of the Final Office Action dated June 13, 2008 (“the Office Action”), claims 1-2, 4-6, 10-11, 16, 19-20, 22, 24, 29-31, and 33 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Kotzin (U.S. Patent Publication No. 2004/0204076) in view of Bahl *et al.* (U.S. Patent Publication No. 2004/0204071; hereinafter referred to as “Bahl”) and further in view of Reddy *et al.* (US Pat Publication No. 2004/0127214; hereinafter referred to as “Reddy”).

Claim 1, as amended, recites a wireless device, comprising:

- a) *a wireless interface* configured to provide short range and low power interface for supporting communication across a wireless connection used for a negotiation service to select a communication interface,
- b) **wherein** the short range and low power interface provides reliable signal and reduced power consumption for negotiation;
- c) *a first communication interface* for providing a medium range wireless interface;
- d) *a second communication interface* for providing a wired interface; and
- e) *a controller* connected to said wireless interface, said controller supporting the negotiation service and a communication service;

- f) **wherein** said negotiation service provides interface negotiation for using said wireless interface to negotiate with another device to select an appropriate communication interface for communication of data with said another device, and to investigate information and capabilities of said another device,
- g) **wherein** said negotiation service selects one of: (1) said first communication interface for direct communication between the wireless device and said another device, and (2) said second communication interface for indirect communication through a network,
- h) **wherein** said first communication interface is a separate interface from said wireless interface used for interface negotiation,
- i) **wherein** said communication service provides control and management of communication with said another device across a connection established using said negotiation service, and
- j) **wherein** a first connection opened using said negotiation service and said wireless interface is kept open while a second connection opened using said communication service and one of said first communication interface and said second communication interface is open so that said first connection is used to adjust the operation of said second connection.

(emphasis / reference designators added)

Accordingly, claim 1 recites at least the following: (e) a controller supporting a negotiation service and a communication service; (f) wherein the negotiation service provides interface negotiation for using a wireless interface to negotiate with another device to select an appropriate communication interface for communication of data with said another device, and to investigate information and capabilities of said another device; (g) wherein the negotiation service selects one of: (1) said first communication interface for direct communication between the wireless device and said another device, and (2) said second communication interface for indirect communication through a network; and (j) wherein a first connection opened using the negotiation service and the wireless interface is kept open while a second connection opened

using the communication service and one of the first communication interface and the second communication interface is open so that the first connection is used to adjust the operation of the second connection.

Regarding limitation (f) of claim 1, it recites that the negotiation service provides interface negotiation for using the wireless interface to negotiate with another device to select an appropriate communication interface for communication of data with said another device, and to investigate information and capabilities of said another device. This limitation (i.e., limitation (f)) is disclosed in Paragraphs [0017] and [0021] of the present publication as follows:

[0017] ... The negotiation service 235 controls the selection of interfaces for communication and the negotiation with another wireless device to determine available interfaces and agree upon an interface, as described below. ... .

[0021] Having found the second device, the first device establishes a negotiation connection with the second device using the default interface, block 310. The two devices use the negotiation connection to investigate information and capabilities of the other device. The two devices can also use the negotiation connection as a control channel while other connections are opened.

The Office Action indicates that this limitation is disclosed in Kotzin, Paragraphs [0019]-[0021], which are recited as follows (emphasis added):

[0019] With reference to FIG. 2 we have described a portable subscriber device that is arranged and constructed to augment and facilitate interfacing to the device. The subscriber device includes the wireless local area transceiver 209; preferably one or more internal interfaces, such as user interface 211; and a controller 207 coupled to the internal interfaces and the wireless local area transceiver. These elements are cooperatively operable for: detecting an external device that is capable of providing an interface to the portable subscriber device; determining whether the external device is available as an interface to the portable subscriber device; and when available as an interface, establishing a wireless link between the portable subscriber device and the external device, where the link will logically and otherwise support the interface.

[0020] Detecting an external device that is capable of providing an interface to the portable subscriber device, preferably, includes performing a service discovery process and receiving, at the wireless local area transceiver 209, a response from the external device. The specifics of the discovery process and the response(s) from the external device will of course depend on the underlying technologies and protocol conventions used by the local area transceivers. Most of these technologies specify the processes, sequences, and protocols to be used for discovery procedures. These procedures and so on are available via the appropriate standards and most of those are published on web sites. For example in the preferred form where a Bluetooth local area transceiver is used, extensive specifications are available at [www.bluetooth.com](http://www.bluetooth.com) in the developer section under specifications. Also typically the user is left to their own to determine what applications to use and the coordination of other device specific parameters and conventions.

[0021] It will be appreciated and understood that special "device profiles" can be created to facilitate the application of this invention for use with short range wireless protocols such as Bluetooth. Additional functionality can be added to the subscriber device user interface to ease the service discovery process and help guide the user to exploit a nearby device to provide the user interface enhancement. For example, the subscriber device might detect the presence of a proximal notebook computer. The subscriber device will determine or negotiates with the external device to determine if it can be used temporarily for the subscriber device's user interface. This might be an automatic grant if, for example, the screen saver has been initiated on the notebook computer device. This screen saver activation would indicate that the notebook is available although the ability to be used as an extension or as another's I/O device would likely additionally require permission from the notebook computer's user. Of course if the subscriber device and notebook computer were under control of the same individual this would not likely be a problem.

Thus, it is clear that Kotzin's "negotiation" is for the subscriber device to negotiate with the external device to determine if it can be used temporarily for the subscriber's user interface. In Kotzin, the "negotiation" is not about which communication interface to use but whether the external device can be used for the subscriber's user interface. Clearly, Kotzin's "negotiation"

does not involve “using the wireless interface to negotiate with another device to select an appropriate communication interface for communication of data with said another device, and to investigate information and capabilities of said another device.”

Regarding limitation (g) of claim 1, it recites that the negotiation service selects one of:  
(1) said first communication interface for direct communication between the wireless device and said another device, and (2) said second communication interface for indirect communication through a network. This limitation (i.e., limitation (g)) is disclosed in Paragraphs [0015] and [0017] of the present publication as follows:

[0015] In the network environment 100 shown in FIG. 1, the wireless devices 105 and 110 can establish connections for direct communication using the short-range wireless interfaces 115 and 130 or the medium-range wireless interfaces 120 and 135. The wireless devices 105 and 110 can also establish connections for indirect communication through a network 140 using the medium-range wireless interface 120 of the first wireless device 105 and either the medium-range wireless interface 135 or the wired interface 125 of the second wireless device 110. As described below, the wireless devices 105 and 110 can use the short-range wireless interfaces 115 and 130 to initially establish communication and negotiate how to proceed with further communication. For example, the wireless devices 105 and 110 may agree to use a connection through the network 140, where the first wireless device 105 establishes a connection to the network 140 using the medium-range wireless interface 120 to connect to a wireless access point of the network 140 and the second wireless device 110 establishes a connection to the network 140 through the wired interface 125.

[0017] ... The negotiation service 235 controls the selection of interfaces for communication and the negotiation with another wireless device to determine available interfaces and agree upon an interface, as described below. ... .

The Office Action indicates that this limitation is disclosed in Reddy, Paragraphs [0020]-[0021] and [0042], which are recited as follows (emphasis added):

[0020] A WTRU [wireless transmit receive unit] in accordance with the invention is used for infrastructure communication in a wireless network via network base stations and for peer-to-peer communications with other such WTRUs. The WTRU has transceiver components that are configured for selective operation in an infrastructure communication mode for infrastructure communication with a network base station and in a peer-to-peer communications mode for peer to peer communications with other WTRUs. The transceiver components may include a wireless local area network (WLAN) modem for the peer-to-peer communications with other WTRUs.

[0021] The WTRU also has a transceiver controller configured to selectively control peer-to-peer mode communications with other WTRUs based on communication signals received in infrastructure communications with a network base station. Preferably, the transceiver controller is configured to control the transceiver components to switch between infrastructure communication mode and peer-to-peer communication mode based on Quality of Service criteria.

[0042] A second user 35 is illustrated operating a second WTRU 37 in the form of a cell phone with a built in Palm-type device including built-in 802.11(b) WLAN 36. The WTRU 37 can also connect with the wireless telecommunications network 27 via signals transmitted and received by antenna 39. The second user 35 may wish talk to the first user 31 or to access or copy the phone book 38 located in the first WTRU 33. Since both WTRUs 33, 37 have a WLAN modem and also a phone network interface, the users 31, 35 are able to communicate either by means of peer-to-peer communication 40 using an 802.11(b) wireless network or by using the telecommunications network 27. Accordingly, there is a decision to be made as to which type of communication mode is to be used.

Thus, it is clear that Reddy's "switching between two communication modes" is based on QoS criteria and not based on negotiation. Further, in claim 1, both communication interfaces (one for direct communication and another for indirect communication through a network) are used for communication between a wireless device and another device (i.e., the two communication interfaces provide an alternative route between them). By contrast, Reddy's "two communication modes" are used for communication between one WTRU and two different

entities (i.e., (1) a network base station and (2) one of other WTRUs). Thus, Reddy provides communication between: (1) a WTRU and a base station; and (2) a WTRU and another WTRU.

Regarding limitation (j) of claim 1, it recites that a first connection opened using the negotiation service and the wireless interface is kept open while a second connection opened using the communication service and one of the first communication interface and the second communication interface is open so that the first connection is used to adjust the operation of the second connection. This limitation (i.e., limitation (j)) is disclosed in Paragraphs [0024]-[0025] of the present publication as follows:

[0024] Once the communication connection has been established, the two devices proceed to communicate across the open communication connection, block 325. The communication across the communication connection proceeds according to the operation of the selected interface and agreed upon communication. If the negotiation connection is still open, the two devices can also exchange information across the negotiation connection while the communication connection is open. For example, the two devices can use the negotiation connection to adjust the operation of the communication connection.

[0025] When the two devices have completed the communication, the first device closes the communication connection, block 330. The two devices can agree across the communication connection that communication has completed or according to conditions agreed upon during negotiation. In one implementation, the two devices keep the negotiation connection open during communication across the communication connection and use information on the negotiation connection to determine when to close the communication connection.

The Office Action indicates that this limitation is disclosed in Bahl, Paragraphs [0014] and [0048]-[0049], which are recited as follows (emphasis added):

[0014] In an embodiment of the present invention where a wireless protocol different than that utilized in the establishment of the control channel is used for the wireless data session, the system of the present invention idles the communications circuitry associated with that control channel protocol to conserve energy in the

wireless device. The system then periodically activates this circuitry to allow for the passing of any additional control messages on this control channel. The period between activation cycles may be varied based on a number of factors including signal fidelity of the wireless protocol utilized in the data session.

[0048] As illustrated in FIG. 6, a control message includes a control command 324 section and a section for the capabilities/preferences parameters 326.

[0049] In an embodiment of the present invention that utilizes a commonly supported wireless protocol to establish the control channel, for example, the 802.11b or Wi-Fi protocol, there is no need to maintain power to the radio transmitter for that protocol once a data session has been established utilizing another wireless protocol. However, since this protocol is utilized as the control channel, control messages between the wireless clients cannot be passed unless and until the circuitry that supports this control channel protocol is powered. As such, FIG. 7 illustrates that periodic activation periods 324 are utilized during which the required circuitry for the control channel is re-powered and any required control messages are passed. As identified in the above-incorporated application, the idle periods 326 during which this circuitry is not powered may be varied based upon the fidelity of the data channel signal, etc. In this way, additional power resources are saved as the idle period 326 is lengthened when the data session is established with a strong signal. This idle period 326 may also be shortened if the established wireless data session is not particularly that strong so that changes to a different wireless protocol or other required control messages may be passed at a greater frequency.

Thus, even assuming arguendo that Bahl's use of dual wireless protocols saves power resources, it would be in contrast to limitation (j) of claim 1 wherein the first connection opened using the negotiation service and the wireless interface is kept open while a second connection opened using the communication service and one of the first communication interface and the second communication interface is open so that the first connection is used to adjust the operation of the second connection.



Based on the foregoing discussion, it is maintained that Kotzin, Bahl, and Reddy, individually or in combination, fail to teach or suggest all of the limitations of claim 1. Therefore, claim 1 should be allowable over Kotzin, Bahl, and Reddy. Other independent claims 19, 29, and 33, as amended, recite similar limitations as claim 1. Therefore, claims 19, 29, and 33 should also be allowable over Kotzin, Bahl, and Reddy. Since claims 2, 4-6, 10-11, 20, 22, 24, and 30-31 depend from one of claims 1, 19, and 29, claims 2, 4-6, 10-11, 20, 22, 24, and 30-31 should also be allowable over Kotzin, Bahl, and Reddy. Claim 16 was previously canceled.

Accordingly, it is submitted that the rejection of claims 1-2, 4-6, 10-11, 16, 19-20, 22, 24, 29-31, and 33 based upon 35 U.S.C. §103(a) has been overcome by the present remarks and withdrawal thereof is respectfully requested.

#### §103 Rejection of Claim 7

In Section 3 of the Final Office Action, claim 7 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Kotzin in view of Bahl and further in view of Reddy as applied to claims 1 and 3 above, and further in view of Janik. (U.S. Patent Publication No. 2004/0253945).

Based on the foregoing discussion regarding independent claim 1, and since claim 7 depends from claim 1, claim 7 should be allowable over Kotzin, Bahl, and Reddy. Further, Janik is merely cited for teaching that “a LAN provides a higher data rate than a WAN.” *Section 3, page 12 of the Office Action*. Therefore, claim 7 should be allowable over Kotzin, Bahl, Reddy, and Janik.

Accordingly, it is submitted that the rejection of claim 7 based upon 35 U.S.C. §103(a) has been overcome by the present remarks and withdrawal thereof is respectfully requested.

§103 Rejection of Claim 8

In Section 4 of the Office Action, claim 8 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Kotzin in view of Bahl, and further in view of Reddy as applied to claims 1 and 3 above, and further in view of Moon *et al.* (U.S. Patent Publication No. 2005/0076054; hereinafter referred to as “Moon”).

Based on the foregoing discussion regarding independent claim 1, and since claim 8 depends from claim 1, claim 8 should be allowable over Kotzin, Bahl, and Reddy. Further, Moon is merely cited for teaching that “a second communication interface uses more power than a wireless interface”. *Section 4, page 13 of the Office Action.* Therefore, claim 8 should be allowable over Kotzin, Bahl, Reddy, and Moon.

Accordingly, it is submitted that the rejection of claim 8 based upon 35 U.S.C. §103(a) has been overcome by the present remarks and withdrawal thereof is respectfully requested.

§103 Rejection of Claims 12, 14-15, 17-18, 25, 27-28, 32 and 34-38

In Section 5 of the Office Action, claims 12, 14-15, 17-18, 25, 27-28, 32 and 34-38 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Kotzin in view of Bahl, and further in view of Reddy and further in view of Shah *et al.* (U.S. Patent Publication No. 2004/0023652; hereinafter referred to as “Shah” ).

Regarding claim 17, it recites further limitations that: the wireless interface supports receiving a beacon signal from a beacon source, and the negotiation service uses the beacon signal to open communication.

Regarding claim 34, it recites a further limitation to claim 17 that the beacon source broadcasts the beacon signal using a short-range wireless interface, such that the wireless interface configured as short range and low-power interface can receive the beacon signal to be used in the negotiation service. This limitation is disclosed in Paragraph [0034] of the present publication, which is recited here:

[0034] The beacon source broadcasts a beacon signal using the wireless beacon interface, block 505. In one implementation, the beacon source uses a short-range wireless interface for broadcasting the beacon signal, such as Bluetooth. The beacon signal includes information indicating a resource and connection information for accessing that resource. The connection information indicates a target device, a target interface, and details on how to set up a connection (e.g., an SSID or URL) to the target device through the target interface. The target device can be different from the beacon source. The beacon signal can also include information for multiple resources or connections. For example, one beacon signal indicates that a particular data file can be accessed through a URL and that a Wi-Fi connection is available in the current physical location as well.

The Office Action indicates that this limitation is disclosed in Shah, Paragraph [0015], which is recited as follows:

[0015] In an IEEE 802-based system, once more than one station is part of an ad hoc network, all of the stations share the burden of sending beacon frames by a random distribution of that task to each station. Algorithms such as the spokesman election algorithm have been designed to "elect" one device as a master station, i.e., a pseudo base station, of the ad hoc network with all other stations being slaves.

Although Shah mentions that the burden of transmitting beacon frames are shared among base stations, applicants respectfully disagree with the Examiner that Shah's transmission of beacon frames teaches the limitation of claim 34 that the beacon source broadcasts the beacon signal using a short-range wireless interface, such that the wireless interface configured as short

range and low-power interface can receive the beacon signal to be used in the negotiation service.

Regarding claim 35, it recites a further limitation to claim 34 that the beacon signal includes information indicating a resource and connection information for accessing that resource. This limitation is disclosed in Paragraph [0034] of the present publication, which is recited above.

The Office Action indicates that this limitation is disclosed in Shah, Paragraph [0015], which is recited above.

Again, although Shah mentions that the burden of transmitting beacon frames are shared among base stations, applicants respectfully disagree with the Examiner that Shah's transmission of beacon frames teaches the limitation of claim 35 that the beacon signal (which is to be used in the negotiation service) includes information indicating a resource and connection information for accessing that resource. Further, other paragraphs of Shah mention beacon signal. However, none indicate that beacon signal is used to provide information indicating a resource and connection information accessing that resource.

Regarding claim 38, it recites a further limitation to claim 17 that the beacon signal is supplied upon request such that when the wireless device enters the range of the beacon source, the device informs the beacon source of the device's presence and the beacon source sends the beacon signal to the wireless device. This limitation is disclosed in Paragraph [0036] of the present publication, which is recited as follows:

[0036] In an alternative implementation, the beacon signal is supplied upon request or is accessed by the wireless device. For example, when a compatible wireless device enters the range of a beacon source, the device informs the beacon source of the device's presence and the beacon source sends the beacon signal to the wireless device. In another example, the beacon signal is

provided as information readable through an infrared interface and a compatible device can read the beacon information as needed.

The Office Action indicates that this limitation is disclosed in Shah, Paragraph [0015], which is recited above.

Again, although Shah mentions that the burden of transmitting beacon frames are shared among base stations, applicants respectfully disagree with the Examiner that Shah's transmission of beacon frames teaches the limitation of claim 38 that the beacon signal (which is to be used in the negotiation service) is supplied upon request such that when the wireless device enters the range of the beacon source, the device informs the beacon source of the device's presence and the beacon source sends the beacon signal to the wireless device. Further, other paragraphs of Shah mention beacon signal. However, none indicate that the beacon signal is supplied upon request such that when the wireless device enters the range of the beacon source, the device informs the beacon source of the device's presence and the beacon source sends the beacon signal to the wireless device.

Based on the foregoing discussion, claims 34, 35, and 38 should be allowable over Kotzin, Bahl, Reddy, and Shah. Further, based on the foregoing discussion regarding claims 1, 19, and 29, and since claims 12, 14-15, 17-18, 25, 27-28, and 32 depend from one of claims 1, 19, and 29, claims 12, 14-15, 17-18, 25, 27-28, and 32 should be allowable over Kotzin, Bahl, and Reddy. Shah is cited here for teaching that "the negotiation service selects a communication interface without user input". *Section 5, page 14 of the Office Action*. Even assuming arguendo that Shah does teach this, Kotzin, Bahl, Reddy, and Shah, individually or in combination, fail to teach or suggest claims 12, 14-15, 17-18, 25, 27-28, and 32. Therefore, claims 12, 14-15, 17-18, 25, 27-28, and 32 should be allowable over Kotzin, Bahl, Reddy, and Shah.

Accordingly, it is submitted that the rejection of claims 12, 14-15, 17-18, 25, 27-28, 32

and 34-38 based upon 35 U.S.C. §103(a) has been overcome by the present remarks and withdrawal thereof is respectfully requested.

§103 Rejection of Claim 23

In Section 6 of the Office Action, claim 23 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Kotzin in view of Bahl, and further in view of Reddy and further in view of Carlton *et al.* (U.S. Patent Publication No. 2005/0141450; hereinafter referred to as “Carlton”) and in further view of Moon.

Based on the foregoing discussion regarding independent claim 19, and since claim 23 depends from claim 19, claim 23 should be allowable over Kotzin, Bahl, Reddy, and Moon. Further, Carlton is cited here for teaching “communication criteria that includes data rate”. *Section 6, page 17 of the Office Action.* Even assuming arguendo that Carlton does teach this, Kotzin, Bahl, Reddy, Carlton, and Moon, individually or in combination, fail to teach or suggest the limitation of claim 23. Therefore, claim 23 should be allowable over Kotzin, Bahl, Reddy, Moon, and Carlton.

Accordingly, it is submitted that the rejection of claim 23 based upon 35 U.S.C. §103(a) has been overcome by the present remarks and withdrawal thereof is respectfully requested.

§103 Rejection of Claim 26

In Section 7 of the Office Action, claim 26 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Kotzin in view of Bahl, and further in view of Reddy as applied to claims 19, 22 and 24 above, and further in view of Ahonen *et al.* (U.S. Patent Publication No. 2005/0085188; hereinafter referred to as “Ahonen”).

Based on the foregoing discussion regarding independent claim 19, and since claim 26 depends from claim 19, claim 19 should be allowable over Kotzin, Bahl, Reddy. Further, Ahonen is cited here for teaching that “the communication mode indicates a type of encryption to use for the communication connection”. *Section 7, page 18 of the Office Action*. Even assuming arguendo that Ahonen does teach this, Kotzin, Bahl, Reddy, and Ahonen, individually or in combination, fail to teach or suggest the limitation of claim 26. Therefore, claim 26 should be allowable over Kotzin, Bahl, Reddy, and Ahonen.

Accordingly, it is submitted that the rejection of claim 26 based upon 35 U.S.C. §103(a) has been overcome by the present remarks and withdrawal thereof is respectfully requested.

Comments on Examiner’s Response to Applicant’s Remarks

In the Examiner’s Response to Applicant’s Remarks section, the Examiner states that Reddy teaches a limitation (limitation (a) of claim 1) that “a wireless interface configured to provide short range and low power interface for supporting communication across a wireless connection used for a negotiation service to select a communication interface” because Reddy teaches a WLAN that can switch to communicate in another interface (i.e., with a base station for communication). Applicants respectfully disagree with this characterization of limitation (a) of claim 1 using Reddy by the Examiner.

As was discussed above regarding claim 1, “interface negotiation” of the present claims involves “using the wireless interface to negotiate with another device to select an appropriate communication interface for communication of data with said another device, and to investigate information and capabilities of said another device. Reddy’s teachings disclose no “negotiation”. Instead Reddy’s teachings disclose “switching between two communication modes” based on

QoS criteria and not based on negotiation. Further, in the present invention, both communication interfaces (one for direct communication and another for indirect communication through a network) are used for communication between a wireless device and another device (i.e., the two communication interfaces provide an alternative route between them). By contrast, Reddy's "two communication modes" are used for communication between one WTRU and two different entities (i.e., (1) a network base station and (2) one of other WTRUs). Thus, Reddy provides communication between: (1) a WTRU and a base station; and (2) a WTRU and another WTRU.




**Conclusion**

In view of the foregoing, Applicants respectfully request reconsideration of claims 1, 2, 4-8, 10-15, 17-20, and 22-38 in view of the remarks and submit that all pending claims are presently in condition for allowance.

In the event that additional cooperation in this case may be helpful to complete its prosecution, the Examiner is cordially invited to contact Applicants' representative at the telephone number written below.

Respectfully submitted,

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